be observed in other insects that when they are sluggish or at rest they are not so readily affected by medicinal agencies as when in a state of motion or excitement.

I remember that, during one or two years, at a certain season, which, as far as my recollection serves me, was in April, I noticed numerous specimens of *Microdon globosus*, a syrphid fly, issue from a nail-hole in the plastered wall of an apartment in a dwelling-house, as though the flies had passed the winter within the walls of the house. Numerous instances, which will occur to experienced entomologists, might be cited of the congregation of winged insects in sheltered situations for the purpose of hibernation, this habit being only a modification of the general habit in hibernating insects to seek a place for individual shelter.

Washington, 11 Nov. 1882.

PROMOTING LOCUST RAVAGES.

BY BENJAMIN PICKMAN MANN, WASHINGTON, D. C.

It is well established that the year 1874 was characterized in the state of Kansas by the most extensive ravages of the so-called Rocky Mountain locust, *Caloptenus spretus*, which insects flew into the state from the west and the north, and stripped large areas bare of vegetation. The devastation in that year occurred principally in the western and central portions of the state, but, as Dr. C. V. Riley says in his 8th report as state entomologist of Missouri, "the greatest bulk of the eggs were [was] laid as the locusts approached the eastern limits of the state." In 1875 "the damage done was by the young locusts, which hatched in enormous numbers in the eastern part of the state."

The purpose of this note is that I may publish a communication sent to me by Mr. J. P. Brown, formerly, for twelve years, a resident of eastern Kansas, from which state he removed, discouraged by the ravages of the locusts, in the fall of 1875. This communication explains sufficiently at least one of the causes of the enormous prevalence of young locusts in that state, in 1875. A similar showing has already been made for the state of Nebraska by Prof. S. Aughey in the 1st report of the U. S. entomological commission. Mr. Brown says:—

"After a twelve year's residence in eastern Kansas, I left that excellent state in the fall of 1875.

"After raising a fine crop of corn and seeing it destroyed by the locusts before it was ripe, or advanced sufficiently for gathering, I was, in common with many thousand others, much discouraged.

"Settlers who had lost all their crops, with very little to subsist upon, found it necessary to hunt prairie chickens, and to sell them for the necessaries of life, and many, for sport as well, made a business during the entire winter of killing and shipping not only prairie chickens, but also quails and other birds.

"I took pains to gather from commission merchants of Leavenworth, Kans., and of Kansas City and St. Joseph, Mo., and from the express companies, such data as I could at the time, and estimated that during the winter of 1874 the enormous quantity of 1000 car-loads of birds were

destroyed and shipped to eastern markets from points west of Saint Louis, Mo.

"The next spring, when the eggs of the locusts began to hatch out, it was discovered, too late, that there were no birds to devour the insects that were so rapidly growing, and must subsist upon the crops until able to fly to other localities.

"It is safe to estimate that a gill [about 0.12 litre] of young locusts, from one day to two weeks old, will number 1000. Yet a gill would be a small day's ration for a prairie fowl, or half that amount for a quail. It can readily be seen that these young insects, no larger when first hatched than a grain of rye would soon have been exterminated had that quantity of birds been preserved for the purpose; instead of which, from an apparent necessity, the birds were destroyed and consequently the total crops of the state of Kansas and western Missouri, Nebraska and part of Iowa were also destroyed.

"Is it not time some protection was afforded these feathered friends? B."

ON A HABIT OF *SCOLOPENDRA MORSITANS*.

BY GEORGE DIMMOCK, CAMBRIDGE, MASS.

The note by Mr. J. W. Freese, on page 290 of the present volume of PSYCHE, upon the habit observed in a species of *Phalangium*, or harvest-man, of putting a wounded part of its leg to its mouth, reminds me of an analogous habit of *Scolopendra morsitans*.

Last March, while at Banyuls-sur-mer, in the eastern Pyrenees, I took advantage of the abundance of *S. morsitans* in that region to see what would be the result of combats between that poisonous myriapod and *Buthus occitanus*, a scorpion not rare in the same region. Without detailing their mode of fighting it suffices to say here that the *Scolopendra* was usually badly lacerated by the violent strokes of the sting of the *Buthus*, the latter animal always being victor. After receiving a stroke from the scorpion the myriapod immediately, in fact with apparent haste, began working at the wound with its mouth-parts, seeming to eat the fluids exuded from its body. For a time the legs of the myriapod were paralyzed near the wound, the scorpion's poison apparently acting on the neighboring nervous centers, but in a few minutes the myriapod recovered the use of its legs, and was only killed after repeated serious tearing of its body by the scorpion's sting.

It is possible that the *Scolopendra* transfers much of the scorpion's poison from the wounds to its stomach, or even that some curative fluid is poured upon them to neutralize the scorpion's poison, but it seems more likely that the process is one of simple cleaning such as the *Scolopendra* would employ if any extraneous matter was put upon the surface of its body, the pain of the wounds only serving to direct immediate attention to them. The same result would probably follow the application of any irritant upon the *Scolopendra*, and with less rapidity if any viscid fluid was daubed upon its body. Many mandibulate insects cleanse their limbs with their mouth-parts, and I have often seen *Scolopendra* use its mouth-parts to clean its antennae, legs, and the surface of its body.

Cambridge, 27 Nov. 1882.